



Health  
Canada

Santé  
Canada

Your health and  
safety... our priority.

Votre santé et votre  
sécurité... notre priorité.

# Is it getting hotter around here? Impacts of climate change on the health of Canadians

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Windsor Essex Climate Change Resilience  
Conference  
February 11, 2011

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**Climate Change and Health Office**  
**Health Canada**



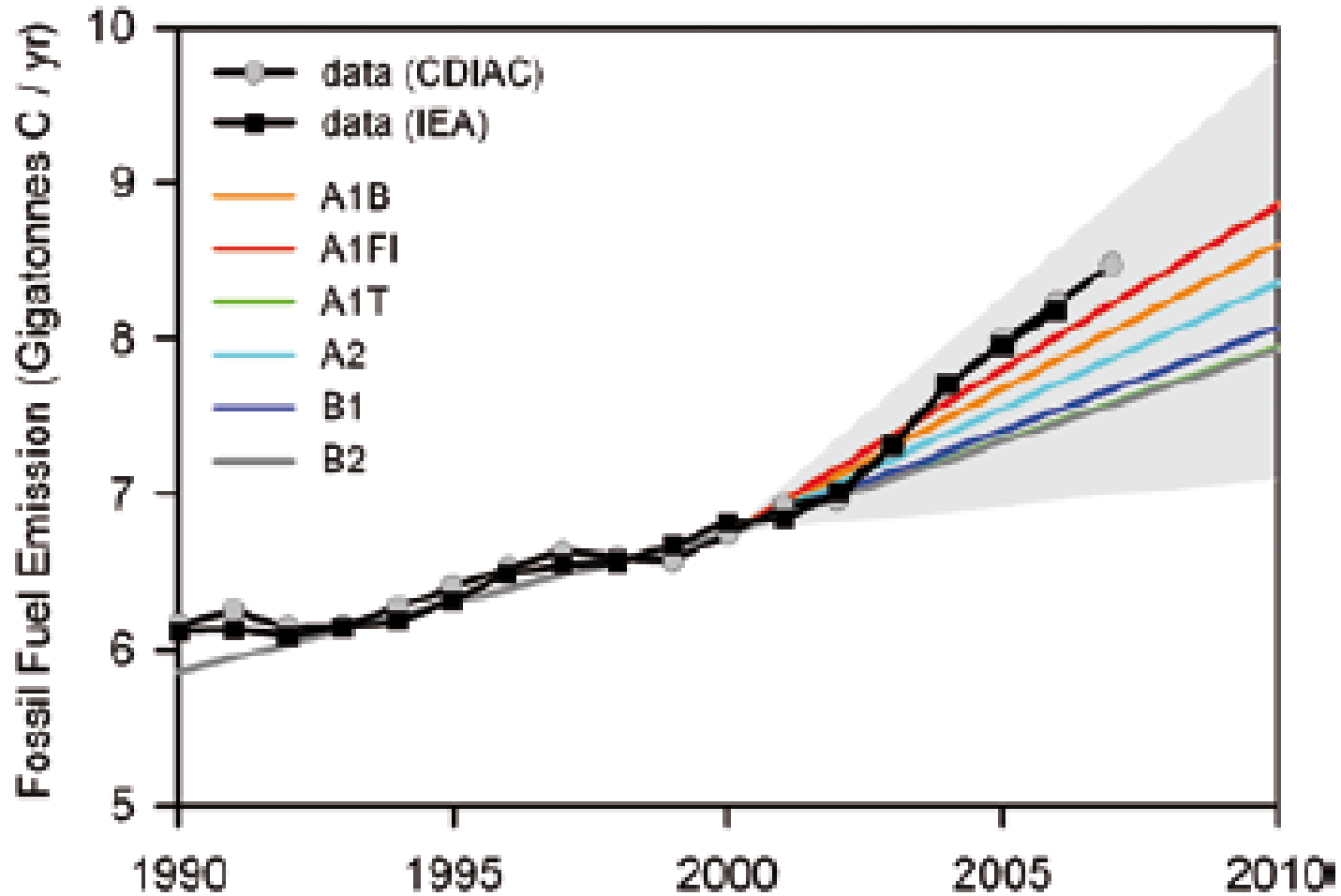
Canada

## Outline

- **Climate change impacts on health**
- **What's in store for Canada**
- **Health Canada's Heat Resiliency Project**
- **City of Windsor – Leading on Heat Adaptation**
- **Climate change and sustainability**



# A Warming World – In Fast Forward



Source: Richardson. *et al.*, 2009

# A Warming World – In Fast Forward

## Winters in Canada are getting milder

- There has been a drastic drop in the number of cold days – defined as anything  $-15^{\circ}\text{C}$  or colder – in recent decades
- The trend exists for Halifax, Montreal, Toronto, Winnipeg and Calgary
  - Toronto – 52.8% drop in cold days from 1970s to 2010
  - Halifax – 36% drop
  - Winnipeg – 16.7% drop
  - Calgary – 26.7% drop
  - Vancouver – 63% drop in number of days below  $-5^{\circ}\text{C}$



# Health Impacts of Climate Change

**Everyone is  
“climate sensitive”**

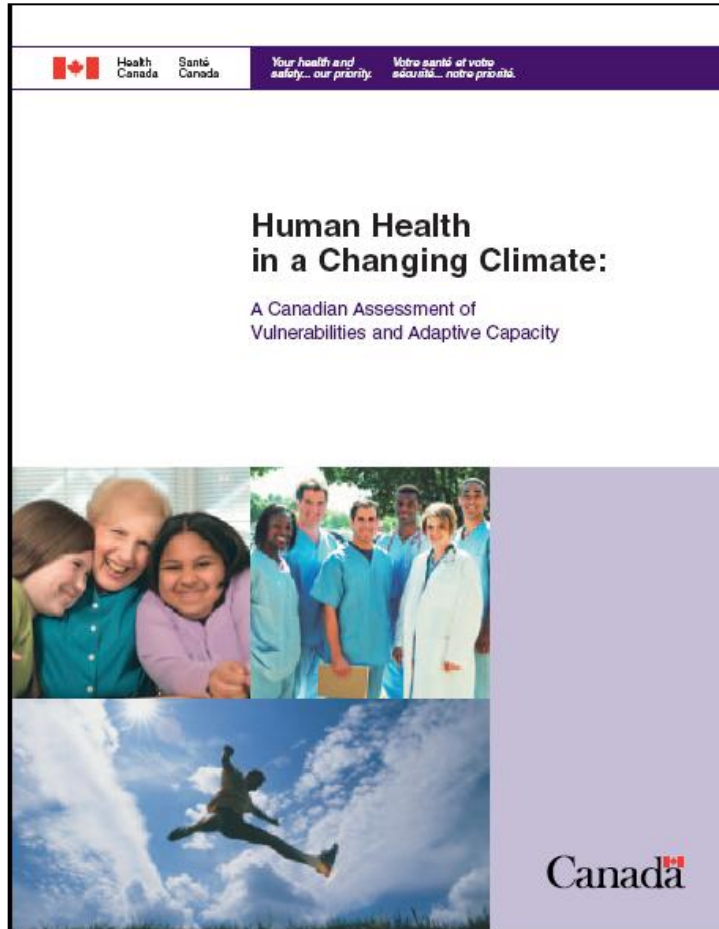


## Australian Flooding – An “Inland Tsunami”

- 25 people killed
- 200,000 people affected over an area larger than France and Germany
- Billions of dollars to repair – “post-war reconstruction”
- 50% of the state of Queensland declared a disaster zone



# Health Impacts of Climate Change



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**Health Impacts of Climate Change in Quebec**

**Health Impacts of Climate Change in Canada's North**

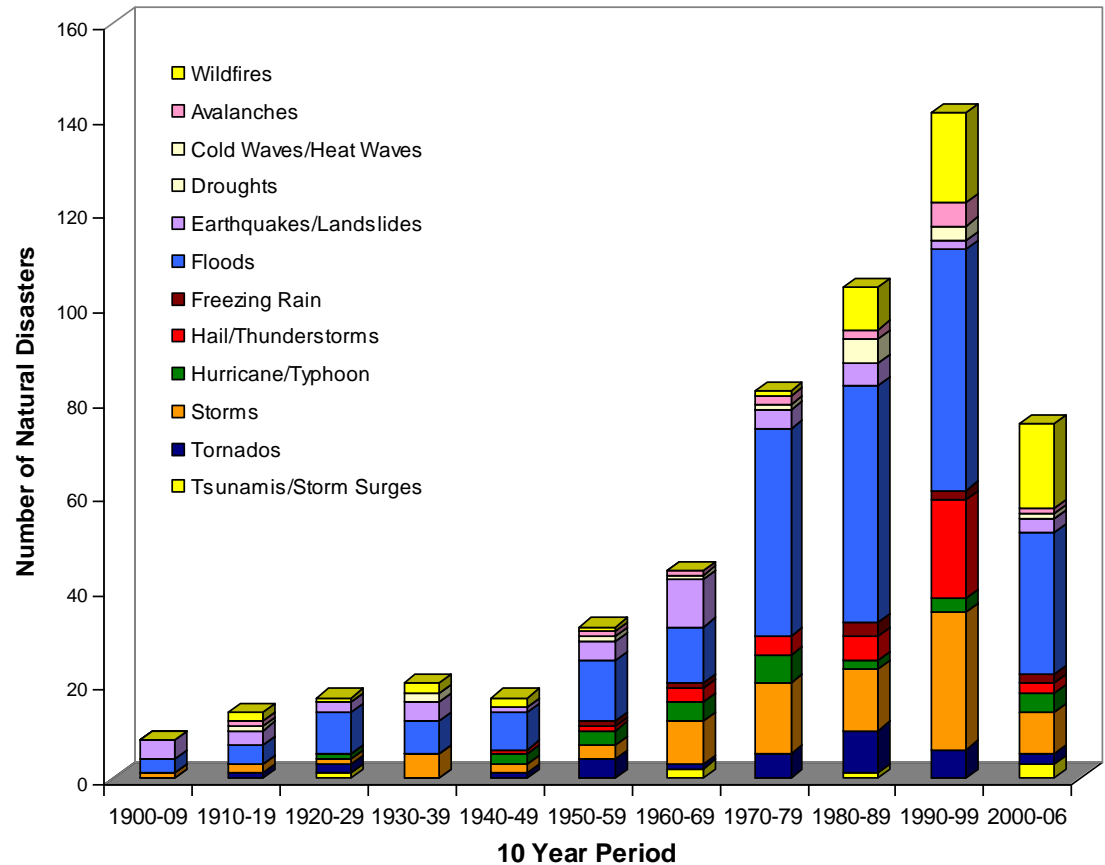
**Vulnerabilities, Adaptation and Adaptive Capacity in Canada**



# What's in Store For Canada?

*Climate change scenarios project an increased risk of extreme weather events in Canada*

Frequency of Natural Disasters in Canada (1900-2006)



Canadian Disaster Database, 2006



# Impacts on Health and Social Services

## Winter Storm – February 2, 2011

### Impacts on Windsor & Essex

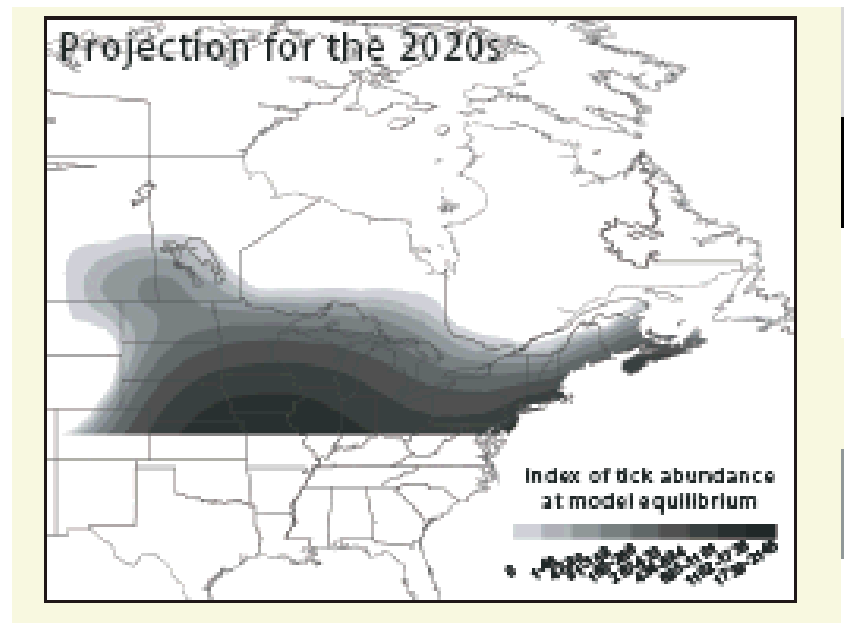
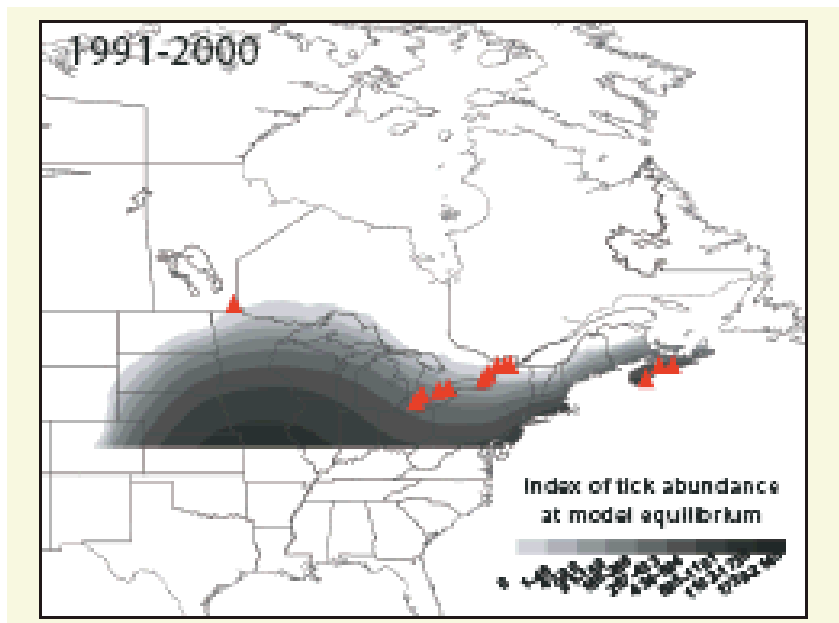
- Public and Catholic school boards cancelled buses in Windsor & Essex
- Windsor-Essex's Canadian Mental Health Association closed. The crisis line remained open.
- LaSalle's municipal offices and the Vollmer Culture and Recreation Complex, along with all the town's programs, are closed and cancelled through Wednesday.
- Tecumseh town hall will be closed to walk-in traffic and transit service is cancelled Wednesday, but the call-in centre will be open.
- VON's Meals on Wheels service for Windsor is cancelled.
- Windsor Medical Clinic -- eastside location on Hawthorne Drive -- will be closed Wednesday.



# What's in Store for Canada?

Climate change is likely to increase risks associated with some infectious diseases across the country, and may result in the emergence of diseases that are currently thought to be rare or exotic to Canada.

## Possible spread of *I. Scapularis* in Canada under climate change

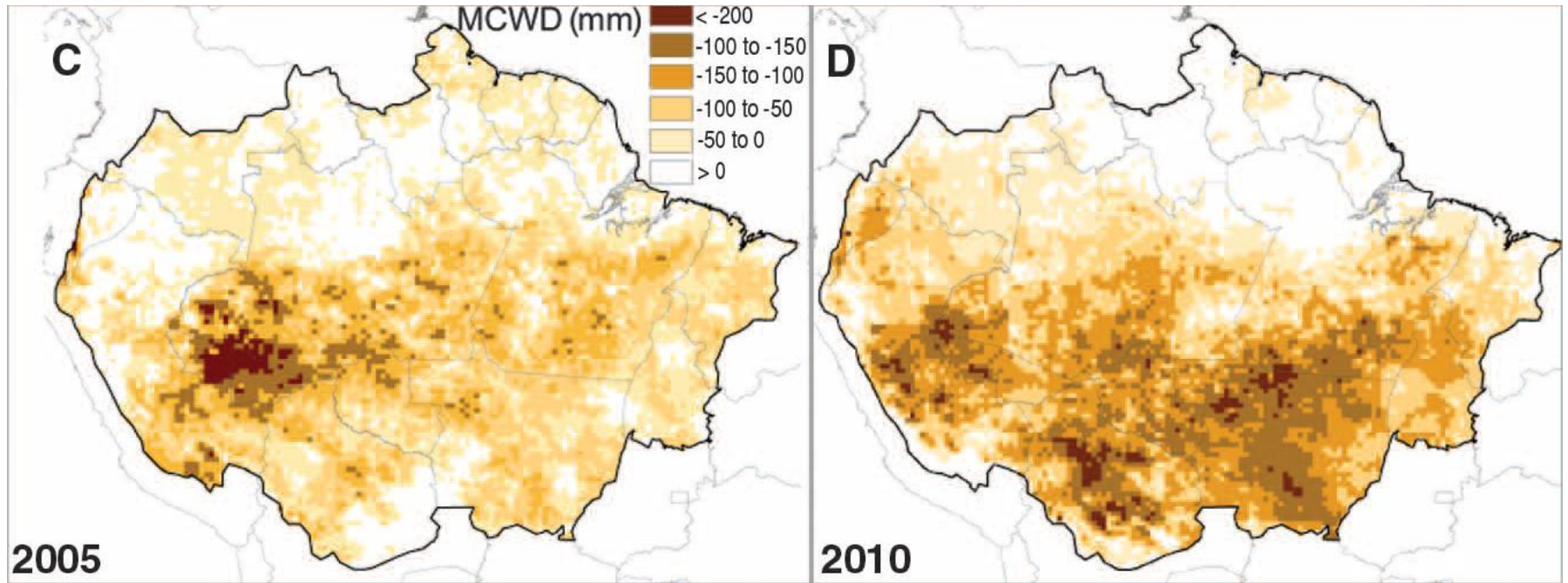


Source: Ogden et al., 2006.



# Long Term Impacts

## Amazonian Droughts 2005 and 2010

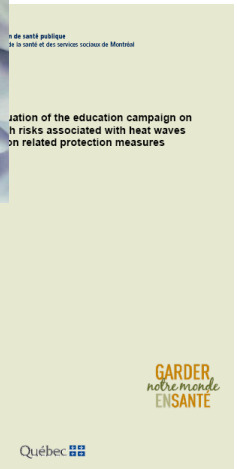
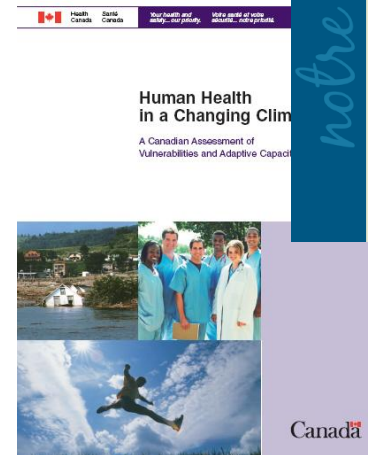


Lewis et al. 2010



# Growing Knowledge of Health Impacts

- World Health Organization (2008) – Protecting Health in Europe from a Changing Climate
- USA (2009) – A Human Health Perspective on Climate Change
- European Environment Agency (2008) – Impacts of Europe’s Changing Climate
- Australia - Climate Change in Australia (2008)
- Stockholm Environment Institute - Growing Old in a Changing Climate (2008)
- UN Food and Agriculture Organization – Climate Change: Implications for Food Safety
- Health Canada – Human Health in a Changing Climate: A Canadian Assessment of Vulnerabilities and Adaptive Capacity (2008)



# Calls for Health Adaptation

## Cancun Climate Change and Health Statement: The Time to Act is Now

- World Medical Association
- World Federation of Public Health Associations
- Physicians for Social Responsibility
- International Council of Nurses
- International Doctors for the Environment
- Health Care Without Harm



# International Action

## Action on Climate Change and Health

- Macedonia: National Climate Change and Health Strategy and National Heat Wave Plan. Conducted a Heat Health Vulnerability Assessment
- Bangladesh: Completed a health sector vulnerability assessment (focus on hospitals)
- PAHO – Developed Hospital Safety Index
- Bolivia: Human Health component of National Plan for Adaptation to Climate Change
- Tunisia: Survey of health care workers to understand knowledge of climate change and health issues
- WHO - Asia Pacific Region: Regional Framework for Action to Protect Human Health from Climate Change
- Brazil – GIS to understand climate change health risks
- USA: Vulnerability assessments in 10 states



# Health Authorities are taking actions

## Ontario Public Health Standards

- Develop and implement healthy policies related to climate change (Requirement 4)
- Increase public awareness of health risk factors associated with climate change (Requirement 3)



(Ontario Public Health Standards, 2008)



# Helping Canadians Prepare for Climate Change

- Extreme Heat and Health
- Climate-related infectious diseases
- Impacts on northern Canadians



# Actions to Protect Health

## Infectious Diseases

- \$7 million / 3 years
  - research to identify climate impacts on vector-borne and water-borne diseases
  - pilot systems in Canadian communities
  - best practices for surveillance and intervention tools



# Actions to Protect Health

## Northern Communities

- \$7 million / 3 years
- Help northern communities understand how climate change will affect their health and develop means to adapt to these changes
- Community-based/centred research
- Incorporation local/traditional knowledge



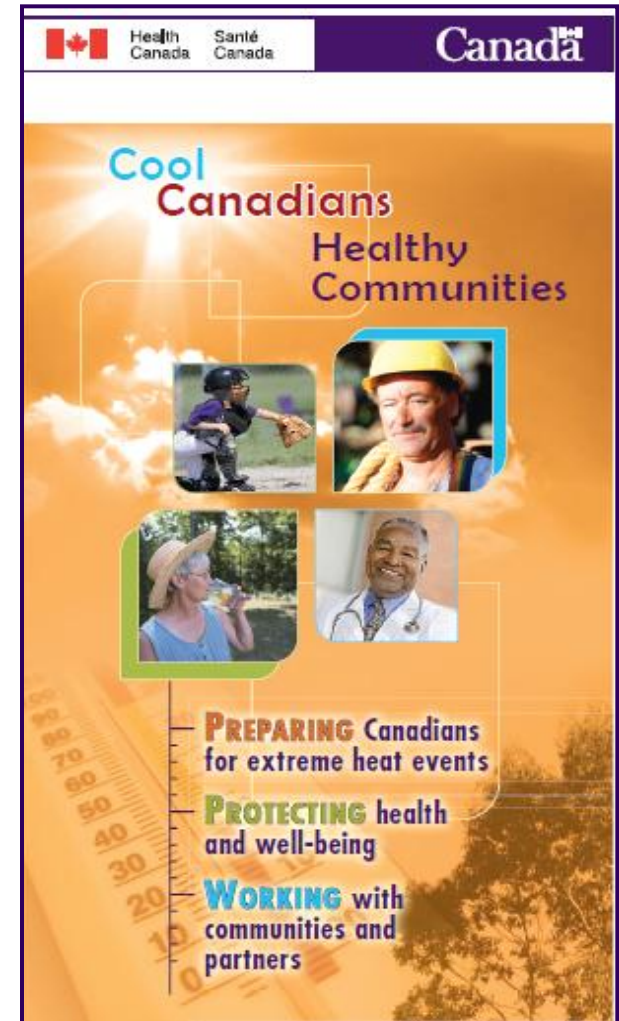
# 37 Funded Communities - 2008-2011

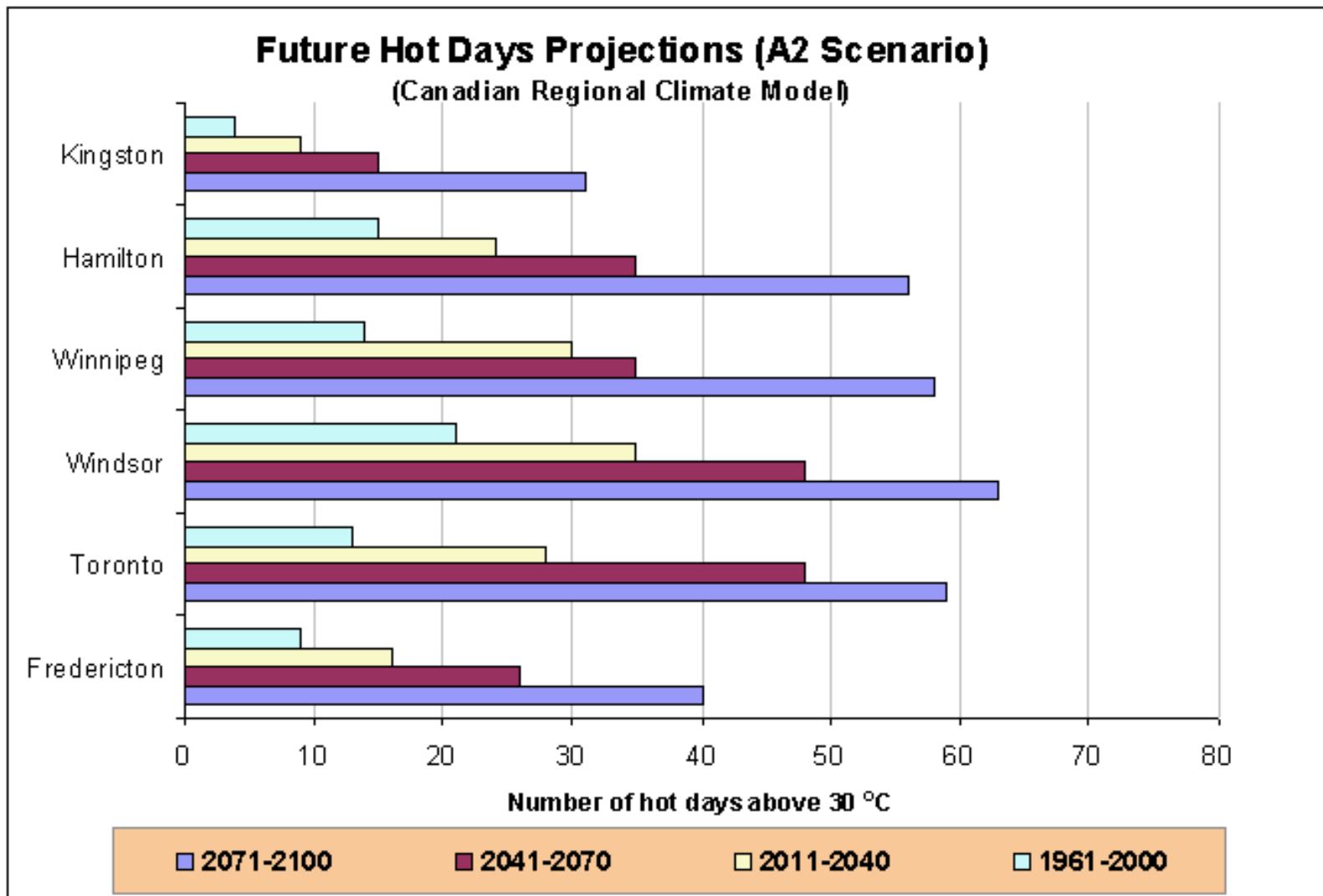


# Health Canada's Heat Resiliency Project

## 4 Pilot HARS Communities

- **Windsor, Ontario**
- Fredericton, New Brunswick
- Winnipeg, Manitoba
- Assiniboine Health Region, Manitoba





*City of Windsor – 39 days in 2010 exceeded 30°C*

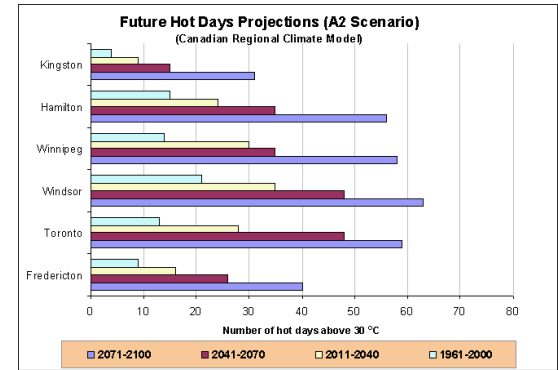
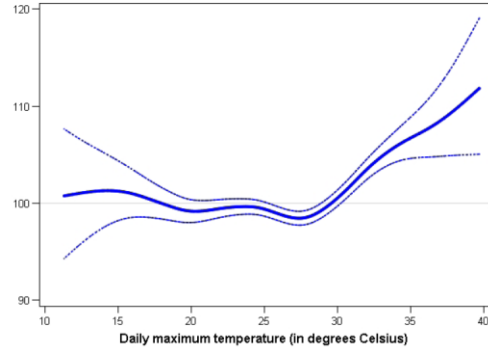
# Windsor HARS – Leading on Adaptation

- Heat Event Simulation – February 14, 2010
- Heat Health Vulnerability Assessment - 3 workshops - May 18th and 19th and June 23rd , 2010
- HARS Plan developed for 2011 heat season
- Communications strategy and products
- Contributing to identification of HARS best practices for use by all Canadian communities



# Assessing Vulnerability in Windsor

Windsor: Relative mortality (%) from 1986-2005

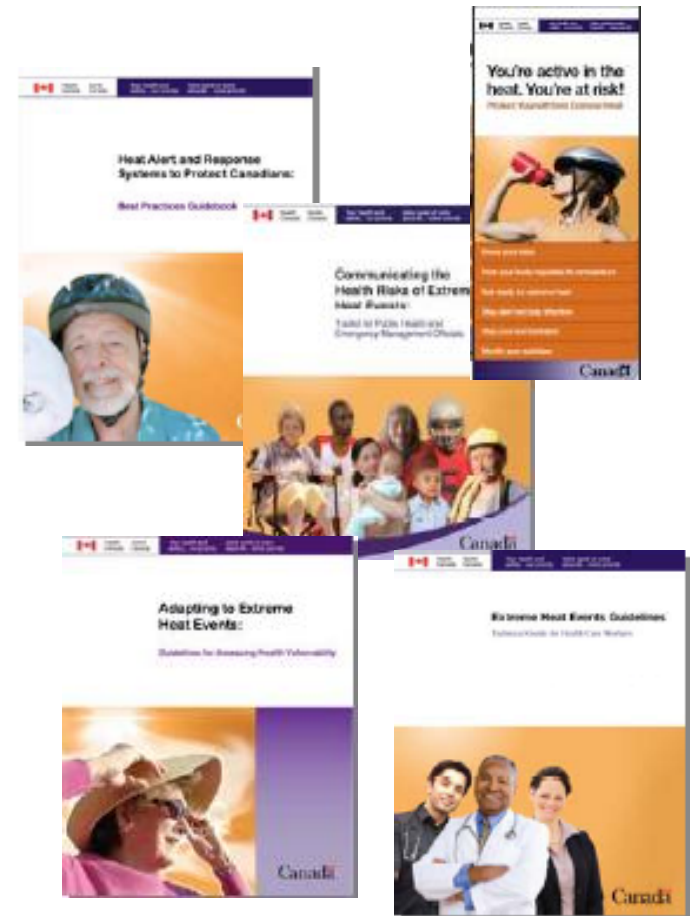


**VULNERABILITY**



# Information to Protect Canadians

- Guidelines for Health Care Workers Regarding Extreme Heat Events
- Guidelines for Assessing Heat – Health Vulnerabilities
- Heat-Health Communications Toolkit
- Best Practices Guide for Heat Alert and Response Systems
- Heat-Health Factsheets for health professionals and the public



# Climate Change and Sustainability

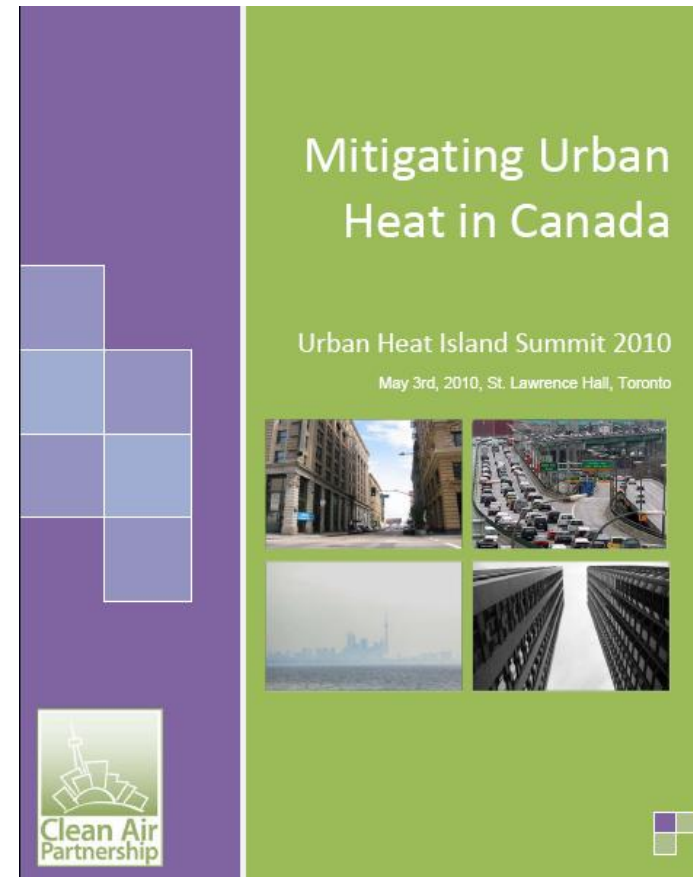
## Health Impacts of the Urban Heat Island

### Direct:

- heat cramps
- heat exhaustion
- heat stroke
- heat syncope
- death

### Indirect:

- Poor air quality
- Energy demand
- Water quality (stormwater)



<http://www.cleanairpartnership.org/files/Background%20Paper%20Final.pdf>



# Better Urban Design to Benefit Health

## Improving Physical Activity

- Creating and maintaining paths for active transport
- Increasing the amount of green space or vegetation
- Making improvements to roads and streets

## Improving Air Quality

- Creating and maintaining paths for active transport
- Increasing the amount of green space or vegetation
- Improving public transit

## Reducing Urban Heat Island

- Increasing the amount of green space or vegetation
- Improvements to roads and streets
- Increasing surface reflectivity



Dalton, 2009



# Thank you!

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